

87. *A. punctatus*, L. Sp. Pl. p. 1601 ; Syn. Hep. p. 583 ; H. P. 77.

Hab. Z₀₋₁ locis humidis solo argilloso præcipue. *St. Pandelon. St. Sever. Loucrup prope B.-de-Bigorre.*

Tribus 4. *RICCIEÆ*, Lindenberg.

36. *Sphærocarpus*, Micheli.

88. *S. Michelii*, Bell. ; Mont. in Ann. des Sc. nat. ix. p. 39 ; Syn. Hep. p. 595.

Hab. Z₀ circa *Dax*. "Elle croît sur la terre humide de quelques landes de *Marensin*, par l'ancienne route de *Bordeaux* à *Bayonne*" (Grateloup, *l. c.*).

37. *Riccia*, Micheli.

89. *R. glauca*, L. ; Syn. Hep. p. 599.

Hab. Z₀ "supra terram argillaceam in locis umbrosis *Dax*" (Grateloup, *l. c.*) ; locis cultis *Sti. Sever*.

90. *R. ciliata*, Hoffm. ; Syn. Hep. p. 602.

Hab. Z₀ "ad terram madidam circa *Dax*" (Grateloup, *l. c.*).

91. *R. fluitans*, L. ; Syn. Hep. p. 610.

Hab. Z₀ "in fontibus *Sti. Pandelon*, &c." (Grateloup, *l. c.*) ; *St. Sever* (Dufour!).

92. *R. natans*, L. ; Syn. Hep. p. 606.

Hab. Z₀ "in aquis stagnantibus *Sti. Paul*, prope Aq. Tarbellicas" (Grateloup, *l. c.*).

XIII.—*Remarks on the Growth of Bambusa arundinacea in the large Conservatory, Chatsworth.* By Mr. ROBERT SCOTT*.

IN the tropics the Bamboo not only grows with astonishing rapidity, but attains a very great height,—in some instances as much as 100 feet†. This, together with its feathery elegance, places it in bold contrast to surrounding vegetation, and entitles it to rank second to the noble Palm. But under artificial culture it is indeed seldom seen in anything like its native majesty,—the extent of our horticultural structures not admitting of its full development.

In some degree at least this defect is obviated here, the *Bambusa* being planted out in a border of rich loam, with plenty of room for its roots, and the canes likewise, in most cases, having ample accommodation. So situated the Bamboo seems at home.

* Read before the Botanical Society of Edinburgh, July 12, 1849.

† Mr. John Gibson, who collected in India for the Duke of Devonshire, has seen the Bamboo 100 feet high.

On the 19th of August, 1846, I observed the crown of a cane just showing itself above the surface of the ground. From its appearance I was led to infer that ultimately it would attain to a large size, and I resolved to watch its progress. The cane was situated at the circumference of a group, and this circumstance rendered the observation of its growth more convenient than it would have been had the cane been situated in the centre.

On referring to notes then made, I find that on September 1st the cane had reached a height of 8 feet from the ground. On the 6th September it had attained the height of 19 feet; and on September 13th it was 25 feet high: during the latter seventeen days of September the growth was uniformly 1 foot per day. Thus in forty-two days the cane had reached 42 feet from the ground, making an average growth of $\frac{1}{2}$ inch per hour. The subjoined table may serve to place this matter in a clearer light.

1846.		Average daily growth.
Aug. 19.	Cane just appearing above ground.	
Sept. 1.	„ 8 feet high.	nearly $7\frac{1}{2}$ inches.
„ 7.	„ 19 „	1 foot 10 inches.
„ 13.	„ 25 „	1 foot.
„ 30.	„ 42 „	1 foot.

Having attained the height of 42 feet, the top of the cane was in immediate contact with the roof of the house. This circumstance rendered an arrest of its progress necessary; had it been otherwise, in all probability the cane would have extended 8 or 10 feet more.

In December 1847, the subject of the preceding remarks, along with the other canes forming the group previously alluded to, was cut down. The following observations were then made: Number of internodes, 32; circumference of the base of cane, 8 inches; circumference of top, $1\frac{1}{2}$ inch. The greatest circumference, 9 inches, occurred 8 ft. 3 in. from the base, and extended over four internodes. The two longest internodes measured each 1 foot 6 inches. They occurred at 19 ft. 8 in. from the base, and were each 8 inches in circumference. The shortest internode was 11 inches, and was the lowermost on the cane.

During the growth of the cane the temperature of the house was,—maximum 87° , minimum 60° , Fahrenheit. (Average $73\frac{1}{2}^{\circ}$.)

In Paxton's 'Magazine of Gardening and Botany' for 1849, p. 62, there are a few remarks on the subject of this notice; but some mistakes have been made in the figures there given.

The cane is now in the British Museum.

I may add, that the *Bambusa arundinacea* very seldom commences to form its canes here until August and sometimes September, while the *Bambusa nigra* invariably makes its growth in May. The latter species has this year produced canes 16 ft. high.